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PATENT SPECIFICATION



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COMPLETE SPECIFICATION

Multiple-Compartment Storage Container

I ANDRÉ REIMBERT: 70, Boulevard Soult—Paris (Seine)—France—a French Citizen, do hereby declare the invention for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to storage containers having a plurality of compartments, for example multiple-compartment silos, and is characterised essentially by a great simplicity and economy in their construction.

It has been proposed to build silos of adjacent rows of intersecting cylindrical storage containers, of brick or concrete, and to connect the nearest points of adjacent containers by a straight wall, the connecting wall being very short. In such a construction the intermediate space enclosed by any four of said containers and the interconnecting walls is of relatively small volume.

The multiple-compartment storage container according to this invention consists of the combination of at least two elementary, spaced or contiguous containers and external partitions connecting the elementary containers so as to form, together with said containers, at least one additional storage compartment serving to increase the total storage capacity of the multi-compartment container, bracing members being provided serving to increase the strength of the whole construction, which members extend between vertical edges of said external partitions, inwardly of the elementary containers if they connect the edges of two consecutive partitions, and inwardly of the said additional compartments if they connect the edges of the same partition.

The connecting partitions may be flat, curved or bent in any desired or suitable fashion, and the elementary containers may have a circular or polygonal horizontal cross-section.

Bracing members or struts are fitted between the vertical edges of two adjacent connecting partitions, or between two separate

portions of a same curved or bent connecting partition.

The walls of the elementary containers may be prefabricated and then readily assembled by means of simple and suitable fastening means.

Other characteristic features and advantages of the invention will appear as the following description of a few forms of embodiment thereof proceeds with reference to the accompanying drawing given by way of example only and wherein:—

Figures 1 to 6 are diagrammatical plan views showing six different forms of embodiment of multiple-compartment storage containers made in accordance with the teachings of this invention;

Figure 7 is a sectional view showing a detail of one possible manner of fastening adjacent elements of the containers.

The container shown in Fig. 1 consists of the combination of four vertical cylindrical elementary containers 1 with four curved connecting partitions 2. This assembly constitutes a container having five separate compartments, that is to say, four compartments constituted by the four elementary containers and an additional compartment bound by the connecting partitions 2 and portions BC, DE, FG and HA (these portions having in this example their concavities facing the centre of the assembly of elementary containers) of the elementary containers 1.

In order properly to brace and stiffen the walls of the various compartments thus constructed the edges of the two connecting partitions 2 adjacent to a common elementary container are interconnected through a strut 3 extending through this elementary container. In certain cases other struts 4 may be disposed between two separate portions of a same curved connecting partition 2.

The struts 3 and 4 may extend throughout the height of the elementary containers 1. These struts may be made of any suitable material.

Besides, the struts 3 and 4 may have a

[Price 3s. 0d.]

shape other than plane or rectilinear, and be formed with bends, holes or apertures of various dimensions.

5 The walls of the elementary containers 1 may consist of any suitable material, even of perforated sheet metal. The various containers 1 may also be constructed from materials differing from one container to another.

10 The nature of the wall of an elementary container 1 may also vary from one portion to another portion of its perimeter. For instance, one wall may be constructed from an adequate material on its side facing the inner space of the assembly and forming one of the 15 zones of the wall of the central compartment, another material being used for constructing the outer side of the container. The walls of the elementary containers 1 may consist of prefabricated elements assembled on the spot through any suitable means.

20 Regarding the connecting partitions 2, they can be constructed from the same or different materials as those utilized for constructing the walls of the elementary containers 1. The curved connecting partitions 2 have their concave sides facing the centre of the assembly in the example shown in fig. 1, but they may alternatively have their concave sides facing the opposite direction if required.

25 In fact, the curvature of these partitions 2 is such that the struts 3 are tangential to the partitions 2 where the latter are joined to the elementary containers 1. With this arrangement it is possible to eliminate the other struts 4.

30 If desired the five compartments shown in fig. 1 may communicate through apertures formed in the portions BC, DE, FG and HA, facing the inner space of the assembly, of the walls of the elementary containers 1. By so interconnecting the five compartments of the container the filling or draining of any one compartment causes the other compartments to be filled or drained simultaneously.

35 Of course, the elementary containers 1 may have a polygonal horizontal cross-section instead of a circular horizontal cross-section (see fig. 5).

40 In fig. 2 there is shown another embodiment of a multiple-compartment container according to this invention, wherein the connecting partitions 2 are flat or rectilinear. These partitions 2 may also have a corrugated horizontal section and/or a corrugated or similar vertical section. The other features of this container are the same as those illustrated in fig. 1.

45 Fig. 3 shows another embodiment wherein the connecting partitions 2 are tangential to the outer walls of the elementary containers 1. In this embodiment, strut means 3 (of the type illustrated in figs. 1 or 2) and 5, interconnecting two portions of two different but adjacent connecting partitions 2, are provided as shown. These strut means 5 extend through

the elementary container positioned between the corresponding connecting partitions 2 to be braced. Moreover, these strut means may be rectilinear or not, and extend or not throughout the height of the elementary containers 1.

50 The container according to this invention which is shown in fig. 4 comprises only three elementary containers 1. The assembly comprises connecting partitions 2 and is substantially of the type illustrated in figs 1 and 2, except that it may also be constructed in accordance with the features shown in fig. 3, that is, with its connecting partitions 2 tangential to the outer walls of the three elementary containers 1.

55 In the above-described forms of embodiment the container according to the invention comprises separate elementary containers 1, but it is also possible to arrange these containers so that they are contiguous to one another, especially in the case of polygonal-sectioned elementary containers. Figs 5 and 6 show two examples corresponding to this arrangement. In the case shown in fig. 5 the elementary containers 1 have an eight-sided form, and in the example of fig. 6 they are six-sided. In both examples the connecting partitions 2 may be curved, straight, corrugated or similarly formed. Strut means 3 and 4 may be provided in the embodiments of figs. 5 and 6.

60 As already pointed out hereinabove, the walls of the elementary containers 1 may consist of prefabricated elements which are assembled on the site. Fig. 7 indicates in section a possible horizontal or vertical joint between these prefabricated elements in the case of sheet metal elements. The sheet metal elements have their edges bent to form a flat inner or outer flange 6 adapted to be subsequently welded, riveted or bolted for definitely or temporarily assembling the adjacent elements. On the side opposite to these flanges 6 there is disposed a flat overlapping element 7 also adapted to be fastened by welding, riveting or bolting to the sheet metal elements. A gasket 8 may be disposed between the sheet metal elements and the flat element 7. This gasket may be resilient or not, tight or not, according to the specific application for which the assembly is intended.

65 Besides, this gasket may extend partially or totally within a spacing provided between the co-operating flanges 6.

70 The aforesaid flanges 6 may also consist of separate elements secured in any suitable fashion. Regarding the flat overlapping element 7, it may advantageously form the vertical edges of the partitions 2 or struts 3 and 4.

75 The joint thus described may be utilized not only in any one of the walls of each of the containers formed, but also in any type of construction or element comprising joints,

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particularly sealed joints.

Of course, the forms of embodiment illustrated in the drawing and described hereinafter are not intended to limit the scope of the invention. Thus, series or batteries of more than three or four elementary containers 1 may be provided, with a sufficient number of connecting partitions 2, for forming additional compartments. The elementary containers 1 may also have different dimensions in a same battery or in a complete multiple-compartment container.

Within certain additional compartments consisting of connecting partitions 2 and of certain portions of elementary containers, it is possible to form secondary containers 9 of smaller capacity. This secondary container 9 may be made from any suitable material and have a circular or polygonal horizontal cross-section. It may be used or not for containing a desired product. Of course, other struts may extend from the secondary container 9 for bracing certain walls of other compartments. It will be understood that these last-mentioned walls may also originate other additional compartments in the assembly.

One or a plurality of compartments constructed in accordance with the teachings of this invention may obviously be used for storing a product differing from those stored in the other compartments, or for any other purpose in connection with the particular nature of the equipment or of the architectural assembly.

The various compartments of the container may be covered or not, provided or not with a bottom floor, mounted or not on piles, or laid on the ground, or sunk partially or totally in the ground, according to the specific uses for which the multiple-compartment container is intended.

What I claim is:

1. Multiple-compartment storage container, for example a multi-compartment silo, which 45 consists of the combination of at least two elementary, spaced or contiguous containers, and external partitions connecting the elementary containers so as to form, together with said containers, at least one additional storage compartment serving to increase the total storage,

capacity of the multi-compartment container, bracing members being provided serving to increase the strength of the whole construction, which members extend between vertical edges of said external partitions, inwardly of the elementary containers if they connect the edges of two consecutive partitions, and inwardly of the said additional compartments if they connect the edges of the same partition.

2. Multi-compartment container according to Claim 1, wherein the walls of the connecting partitions are plane.

3. Container according to Claim 1, wherein the connecting partitions are curved.

4. Container according to Claim 3, characterized in that the connecting partitions are part cylindrical.

5. Container according to Claim 1, wherein the connecting partitions are corrugated or similarly formed when seen in vertical section.

6. Container according to any of the Claims 1 to 5, characterized in that at least one strut is provided extending between two different but adjacent connecting partitions, said strut extending through the elementary container concerned.

7. Container according to Claim 6, characterized in that the struts extend throughout the entire height of the elementary containers.

8. Container according to any of the preceding claims, characterized in that in the inner space of certain compartments formed by the connecting partitions and by certain portions of the walls of some or all of the elementary containers, there is provided an additional or secondary container having a smaller cross-sectional area.

9. Container according to any of the preceding claims, characterized in that passages are provided between the elementary containers and the compartments created by said connecting partitions.

10. Containers substantially as described hereinbefore and shown in the accompanying drawings.

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1 SHEET This drawing is a reproduction of the Original on a reduced scale.

Fig.1

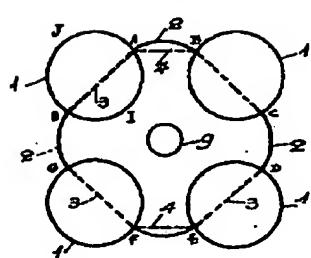


Fig.5

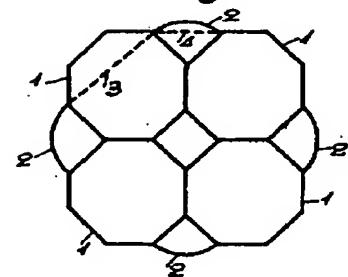


Fig.2

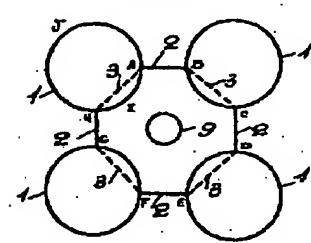


Fig.6

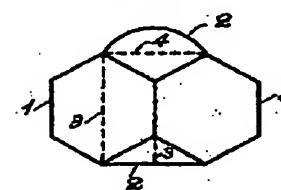


Fig.4

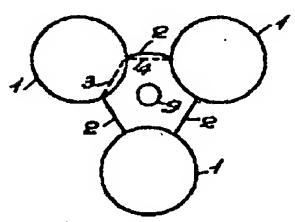


Fig.3

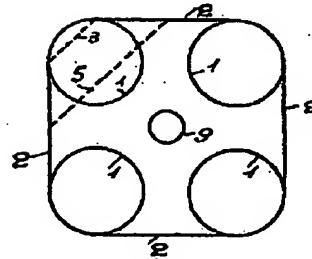


Fig.7

